



# UNITED STATES PATENT AND TRADEMARK OFFICE

8/1  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,477	07/01/2003	Xiaoye Wu	128628/YOD GERD:0039	3299
7590	06/29/2004		EXAMINER	
Patrick S. Yoder FLETCHER YODER P.O. Box 692289 Houston, TX 77269-2289				YUN, JURIE
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/611,477	WU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jurie Yun	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 01 July 2003.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-7 and 9-13 is/are allowed.
- 6) Claim(s) 14-21 is/are rejected.
- 7) Claim(s) 8 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Claim Objections***

1. Claim 8 is objected to because of the following informalities: in line 4, there appears to be a typo in that “a matrix **the** of BIS” should be “a matrix of BIS”. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 16-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A “computer program” is a non-statutory category of invention. The invention may be claimed as a “computer-readable medium”.

See MPEP 2106 (a):

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure

and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Toth et al. (USPN 6,115,487).
6. With respect to claims 14 and 15, Toth et al. disclose a CT image analysis system (10) comprising: an X-ray source (14) configured to emit a stream of radiation; a detector (18) configured to detect the stream of radiation and to generate one or more signals responsive to the stream of radiation, wherein the detector comprises a plurality of detector elements (20); a system controller (28) configured to control the X-ray source and to acquire projection data from one or more of the detector elements via a data acquisition system (32); a computer system (36) configured to receive the projection data and to reconstruct the projection data to form an image; an operator workstation (40) configured to display the image; and means for estimating a BIS artifact using spectral matching (column 3, lines 58+), and means for correcting the BIS artifact in the image (column 4, lines 64-67).

***Allowable Subject Matter***

7. Claims 16-21 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101 set forth in this Office action.
8. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to disclose a computer-readable medium for estimating a BIS artifact for one or more detector elements comprising a routine for scaling the first incident spectrum to produce a scaled spectrum which corresponds to the second incident spectrum, wherein the scaled spectrum differs from the first incident spectrum by an apparent projection value shift which corresponds to a BIS artifact at the projection value for the respective detector element, as claimed.
9. Claims 1-13 are allowed.
10. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to disclose a method for estimating a BIS artifact for a detector element, the method comprising scaling the first incident spectrum to produce a scaled spectrum which corresponds to the second incident spectrum, wherein the scaled spectrum differs from the first incident spectrum at a projection value by an apparent projection value shift which corresponds to a BIS artifact at the projection value for the detector element, as claimed.

Prior art fails to disclose a CT image analysis system comprising a computer system configured to scale the first incident spectrum to produce a scaled spectrum which corresponds to the second incident spectrum and differs from the first incident

Art Unit: 2882

spectrum by an apparent projection value shift corresponding to a BIS artifact for the one or more detector elements, as claimed.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lindstrom et al. (USPN 5,774,519) disclose a method of and apparatus for calibration of CT scanners. Seppi (USPN 4,149,081) discloses removal of spectral artifacts and utilization of spectral effects in computerized tomography.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jurie Yun  
June 25, 2004

*Craig E. Church*  
Craig E. Church  
Primary Examiner